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TITLE: FINNED HEAT EXCHANGER

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ABSTRACT:

PURPOSE: To enhance the heat transfer performance of a plate fin by reducing the dead water region developed in the wakes of heat transfer pipes by a structure wherein cut-and-rised parts, the leg portion and the triangular

opening of which are lain along a curve smoothly deflecting the stream line of air flow, are provided on the plate fin so as to face the openings opposite to the stream line of air flow.

CONSTITUTION: A plurality of cut-and-rised parts 10, the two sides parallel to the front edge of a fin (the upper stream end of a fin with respect to the air flow) of each of which are open in triangular forms, are provided in a domain lying between the line connecting the centers of heat transfer pipes on the upstream side of the air flow flowing in the direction indicated with the arrow 8 or in the first row and the front edge of the fin. In addition, as for the triangular form of the opening, the angle between the flat fin and the hypotenuse, which lies nearer the heat transfer pipe than the leg, is made an angle of 45° or less. Further, groups of upright shaved parts 9, which lie in rows of the groups of the upright shaved parts 10, are arranged around the heat transfer pipe. The arrangement of a plurality of the cut-and-rised parts 9 and 10 on the flat fin 5 is equal to the state that a plurality of short fins stood in the direction of air flow on the flat fin 5. A thin temperature boundary layer is formed on each of said short fins, the air side heat transfer

rate is remarkably improved due to the so-called leading edge effect.

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